Name: _____ Date: _____

Junior Scientist **Lesson 3**

Fireworks!

Fireworks are amazing! The variety of colours and shapes—not to mention the noise of the explosions!—make us gasp in surprise and delight.

How are fireworks made, and how do they work? Fireworks depend on the combustion of different metals to produce their brilliant light effects. Pyrotechnics is both a science and an art.

Watch this video, which explains what is inside a firework and how it bursts into dazzling sparks in the sky.

How Do Fireworks Work?

Length: 9 min 50

1. True or false? If a statement is false, correct it.

	TRUE	FALSE
a) Fireworks are a recent invention.	◯	◯
b) If there is no fuse in a firework, it is not dangerous.	◯	◯
c) The arrangement of the stars inside the shell determines the shape of the firework.	◯	◯
d) When strontium burns, it produces a green flame.	◯	◯
e) When copper burns, it produces a blue flame.	◯	◯

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2. A firework explodes in two stages. In your own words, explain what happens in each stage.

- _____

_____

- _____

_____

3. Which part of the shell contains the substances that will produce colour?

_____

4. What creates the different colours of a firework?

_____

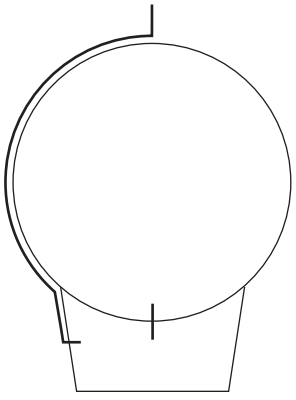
_____

5. At which stage or stages is working with fireworks dangerous? Check all the correct answers.

- ☐ Making the explosive charges and the stars
- ☐ Assembling the shell
- ☐ Storing and transporting the shell
- ☐ Installing the shell in the mortar
- ☐ Lighting the firework

6. Below is a simplified diagram of the inside of a firework shell. First, complete the diagram by adding your choice of shape for the firework. Then label the parts of the diagram, using the following words.

• Burst charge • Inner fuse • Lift charge • Outer fuse • Stars



Shape the firework will form in the sky:

_____

_____